Name: _____ Date: _____

Absolute Value Transformations

$$f(x) = a|x - h| + k$$

- **a :** _____
- **h :** _____ **Vertex :** _____
- **k :** _____

Describe the transformations:

1. $f(x) = |x + 1| - 3$

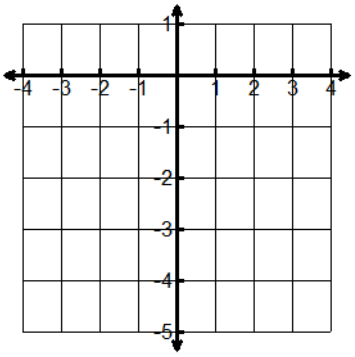
2. $f(x) = -|x| + 4$

3. $f(x) = 2|x - 1| - 6$

4. $f(x) = \frac{1}{3}|x + 2| + 3$

Graph the following absolute value functions using transformations

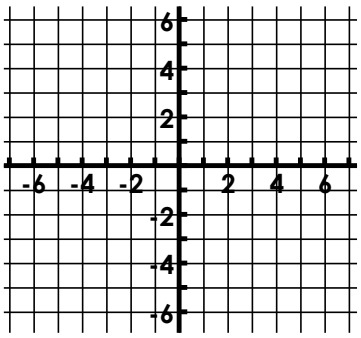
5. $f(x) = 2|x - 1| - 4$



Vertex _____

Transformations:

6. $f(x) = -|x + 2| + 3$

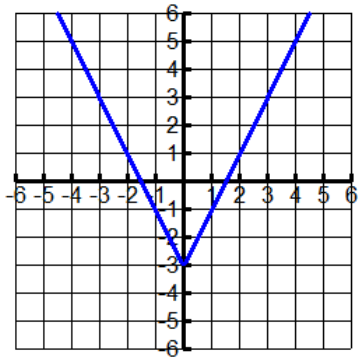


Vertex _____

Transformations:

Write the equation of the absolute value given the graph.

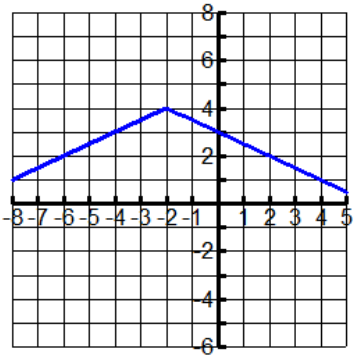
7. f(x) = _____



Vertex _____

a: _____

8. f(x) = _____

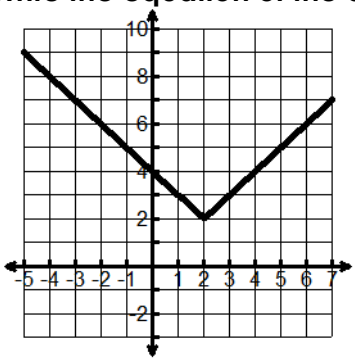


Vertex _____

a: _____

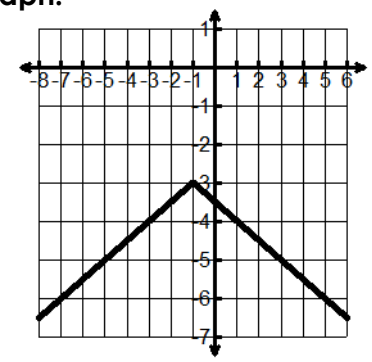
You try!! Write the equation of the absolute value given the graph.

9.



f(x) = _____

10.



f(x) = _____

Solving Absolute Value Equations: $|ax+b|=c$, *where* $c>0$

- Isolate the absolute value, then split into 2 equations: $ax+b=c$ or $ax+b=-c$
- ALWAYS check for extraneous solutions!

11. Solve for x: $|x-3|=6$

12. Solve for x: $|6x-3|=15$

13. Solve for x: $|2x+7|-3=8$

14. Solve for x: $|2x-5|=9$

15. Solve for x: $|2x+5|=11$

16. Solve for x: $|4x+10|=6x$